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UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
Washington, D. C.

FIELD LETTER No. 30.
August 23, 1917.

Logan Waller Page, Director.

P. St. J. Wilson, Chief Engineer; J. E. Pennybacker, Chief of Management; Samuel Fortier, Chief, Irrigation Investigations; S. H. McCrory, Chief, Drainage Investigations; E. B. McCormick, Chief, Rural Engineering; Prevost Hubbard, Chief, Tests.

FEDERAL AID.

State Legislation.

The 1917 legislation in Vermont and Wisconsin was found to be adequate for cooperating under the Federal Aid Road Act, Copies of 1917 legislation were submitted to the Solicitor for consideration by Indiana, New York, California, Illinois, South Dakota, and Iowa.

The State Highway Commission of Montana requested this Office to submit to them a form of assent which would be satisfactory. A resolution of assent was prepared in this Office and approved by the Solicitor of the Department.

Federal Aid Administration.

In connection with questions raised in Mississippi projects, the Secretary gave it as the view of the Department that a certificate showing that any number of counties had raised sufficient funds to meet the Federal Aid allotment for a given year would adequately satisfy the proviso in Section 3 of the Federal Act, and that, therefore, it would not be necessary that all of the individual projects which the state highway commission might propose to construct during the year be submitted to, and approved by, the Secretary at one time.

The Secretary, by letter of July 20, addressed to Mr. W. D. Uhler, Chairman of the Executive Committee of the American Association of State Highway Officials, amended his letter of February 8, relative to the basis for determining the value of convict labor furnished by the States as a contribution to road work where Federal Aid might be involved. The amendment was contained in the following clause:

UNITED STATES
OFFICE OF THE
ALCOHOLIC BEVERAGE TAX
WASHINGTON, D. C.

June 1, 1934

Mr. J. H. [illegible]

Alcoholic Beverage Tax Division, U. S. Department of the Treasury

Washington, D. C.

Dear Sir:

Reference is made to your letter of May 15, 1934, regarding

the application for a license to sell alcoholic beverages

in the State of California.

The application is being forwarded to the proper authorities

for their consideration.

Very respectfully,
[illegible]

Special Agent in Charge

Alcoholic Beverage Tax Division

U. S. Department of the Treasury

Washington, D. C.

Enclosed for the State of California are the following

documents:

1. Application for a license to sell alcoholic beverages

in the State of California.

2. Certificate of the State of California.

3. License to sell alcoholic beverages in the State of California.

4. License to sell alcoholic beverages in the State of California.

5. License to sell alcoholic beverages in the State of California.

6. License to sell alcoholic beverages in the State of California.

7. License to sell alcoholic beverages in the State of California.

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26. License to sell alcoholic beverages in the State of California.

27. License to sell alcoholic beverages in the State of California.

28. License to sell alcoholic beverages in the State of California.

29. License to sell alcoholic beverages in the State of California.

30. License to sell alcoholic beverages in the State of California.

"Where the State is prohibited by law from awarding a project to contract or where conditions are such as to make it impracticable or unduly expensive to do the work by contract, and the State Highway Department desires that it shall be done by day labor or convict labor, payment may be made by the Federal Government on the basis of the labor and materials which have been actually put into the road. The value of such labor and materials in such case, and also in cases arising under paragraphs (2) and (3) if so provided in the project agreement, shall be determined on the basis of the unit prices set forth in the estimate as approved by the Secretary."

Federal Aid Projects.

Project statements were submitted to the Secretary as follows: Arkansas land 2; Colorado 1; Iowa 1; Kentucky 1; Louisiana 6; Michigan 3 and 6; Minnesota 3, 4, 7, and 13; Missouri 2; New Hampshire 2, 4, 5, 6, 7, 8, and 9; North Carolina 5, 7, 12 and 14; Vermont 1 and 2; Virginia 4; Washington 3 and 4; West Virginia 1; Wisconsin 1, 2, and 3.

Project statements were approved by the Secretary as follows: Arkansas No. 2, road between Batesville and Mt. Vernon; Michigan No. 8, South Haven-Saugatuck Road, located on Western Michigan Pike Route; Minnesota No. 12, the St. Paul-Stillwater Road; Vermont No. 1, French Hill, between Williston village and Richmond village, Chittenden County; Vermont No. 2, Winooski River Road, between Waterbury and Middlesex, Washington County; Virginia No. 2, the Marumsco-Neapsco Road, Prince William County; Virginia No. 3, Kecoughtan-Hampton toward Newport News; Washington No. 2, Navy Yard Highway, Clifton-Port Orchard section, State Road #21; Washington No. 3, State Road #22, Meyer Falls to Kettle Falls; Washington No. 4, Pacific Highway, Pioneer-LaCenator project, Clarke County.

Project agreements were prepared as follows: New Hampshire 1 and North Carolina 2.

Project agreements were sent to the highway departments as follows: Maine 1 and Maryland 1.

Project agreement for Washington Project No. 1, Pacific Highway, Olympia-Tacoma Section, was executed by the Secretary on July 19.

District Engineer Hewes inspected a proposed post road in Idaho from Mackay to Salmon, 120 miles in length.

Project statements covering rural post road work from Washington exhausting 1917 and 1918 allotments have all been submitted to the district engineer and all of the projects examined in the field. Washington No. 7, 1918, is now under discussion with the State Highway Department.

District Engineer Whittaker conferred with the State Highway Commissioners of Montana and Utah regarding the beginning of Federal Aid work.

District Engineer Hathaway reports the receipt at his office of three new project statements from Minnesota; three from North Dakota; and three from Wisconsin. No project statements have yet been submitted by South Dakota, inasmuch as under the new law the State Highway Commissioner could not be appointed until July 1, and no funds become available until that date for Federal aid work. Mr. Hathaway recently made an inspection trip of the western part of Minnesota with State Highway Commissioner Babcock and Deputy Commissioner Mullen also a trip to Pierre, South Dakota, to assist in the organization of the New State Highway Department.

During the month Mr. Scales made inspection trips in six counties in North Dakota.

District Engineer Wonders reports the receipt of Project Statement No. 1 from Iowa and Nos. 1 and 2 from Missouri, and writes that the highway departments of these two States will be in position to submit others after being informed regarding the sufficiency of the initial statements submitted, which were duly sent to the Chief Engineer.

Iowa No. 1 conforms more nearly in every particular with the requirements of the Government regulations than any project statement received in the Washington Office to date, and also made the best time record between leaving the State Highway Department and reaching the Secretary.

The State Highway Commission of Kansas has adopted a method of procedure for road improvement providing for the allowance of 15 per cent of the cost from Federal Aid fund, and has published instructions for the guidance of counties desiring to cooperate with the Commission. It is reported, however, that it will take considerable time to comply with the detailed requirements of this procedure and for this reason probably Kansas will be the last State in District 5 to submit project statements.

The State Engineer of Nebraska has about completed his investigations of the road conditions in Nebraska, and the State's program is almost ready for submission. It is reported that project statements may be expected at an early date.

District Engineer Fauntleroy attended the opening of bids for Argenta Cantonment Road (Arkansas No. 2) on July 2, and later assisted the State Highway Engineer in preparing plans, specifications, and estimates which were promptly forwarded to Washington, and the project was approved by the Secretary. He also made inspections of roads projects in four counties in Arkansas.

Highway Engineer H. K. Craig inspected a number of roads on which Federal Aid will be requested in eight Parishes in Louisiana, and advised with the State Highway Department regarding the preparation of project statements, since which time seven project statements (1918 appropriation) were submitted by that State to the District Engineer. They were returned, however, for correction.

Highway Engineer H. C. Wells, with the State Highway Engineer of Oklahoma, inspected a project on which Federal Aid will be requested in McCurtain County, Oklahoma.

Five-year programs of work were submitted by the States of Texas and Oklahoma, and were promptly forwarded to the Chief Engineer.

Mr. Edward P. Shuman, appointed Senior Highway Engineer during the latter half of July has been applying himself diligently studying the details of Federal Aid work preparatory to assignment to District 6.

District Engineer Voshell inspected Kentucky Projects Nos. 1 and 2, and Michigan No. 6; conferred with the Michigan State Highway Department regarding Federal Aid projects, and prepared several typical specifications for various phases of road work. At the request of Major Sawyer he visited Rockford, Illinois, and made recommendations relative to construction of roads in the camp.

District Engineer Bullen was in Atlanta two days with the State Highway Department of Georgia, correcting project statements. He also inspected a proposed project near Silver Lake cantonment; and later made an inspection of Lowndes County project, in Alabama.

Highway Engineer W. H. Rhodes inspected several proposed projects in Alabama; and discussed Federal Aid with the Tennessee Highway Department.

District Engineer Miller inspected a number of proposed projects in New Hampshire and Vermont; conferred with the Chief Engineer of Rhode Island; visited the Highway Department of New Hampshire; and advised with Commissioner Bennett of Connecticut. He also inspected the cantonment at Wrightstown, N. J., advising with Major Williams regarding proposed construction, and reported on conditions in cantonments at Ayer, Mass., Yaphank, L. I., and Wrightstown, N. J.

District Engineer Bishop reports that the new State Highway Commission of West Virginia is showing interest in Federal Aid projects, having submitted its first project statement July 21.

Pennsylvania Projects Nos. 1, 2, and 3 were advertised for the third time.

During the month 6 project statements were submitted to the district office, 4 by North Carolina, and 1 each by Virginia and West Virginia.

Mr. Bishop and his assistants made inspections of projects in Virginia, North Carolina, and West Virginia.

The Secretary approved three project statements from District 10, Virginia Nos. 2 and 3 and North Carolina No. 3.

Bids were called for on Virginia No. 3 and West Virginia No. 1.

National Forest Roads.

During the first part of July the forest road work in Forest Districts 1 and 4 was transferred to our District 3. Our District No. 1 now has jurisdiction over roads within or partly within national forests in Alaska, and substantially all of Washington and Oregon, and a small part of California; District No. 2, substantially all of California, Arizona and New Mexico, and a small part of Nevada; District No. 3, substantially all of the States of Idaho, Montana, Wyoming, South Dakota, Nevada, Utah and Colorado, and small parts of Washington, Oregon and Arizona; District No. 4, the States of North Dakota, Minnesota and Wisconsin.

Location surveys, in accordance with cooperative agreements between the Secretary and the State in which proposed work is located (or county in certain cases), were authorized on the following projects:

Buffalo-Tensleep, Bighorn National Forest, Johnson and Washakie counties, Wyoming;

Charleston-Jarbridge, Humboldt National Forest, Elko County, Nevada;

Clifton-Springerville, Apache National Forest, that section of the road in Apache County, Arizona;

Durango-Silverton, Durango National Forest, San Juan and La Plata counties, Colorado;

Monarch Pass, Cochetopa National Forest, Gunnison and Chaffee counties, Colorado;

Rabbit Ears, Routt National Forest, Grand and Jackson counties, Colorado;

Hayfork-Hyampom, Trinity National Forest, Trinity County, California.

Construction work on the Warm River-Yellowstone Project, Wyoming, was begun July 23. This road is located in southern Idaho, extends from

Warm River, Idaho, toward the Idaho-Montana State line, terminating near Yellowstone, Montana, is 47.3 miles in length and 37 miles thereof are within the Targhee National Forest.

During the month there were received from District Engineer Hewes reconnaissance survey reports on 8 National Forest projects, namely, Anna Creek, Flora-Enterprise, Eugene-Florence, Tiller-Trail, Prineville-Mitchell, and Mount Hood Loop, in Oregon, and Blewett Pass, and Republic-Wauconda, in Washington, covering 199.55 miles in length, the estimated cost of construction being \$984,867.18.

Mr. Whittaker transmitted to the Chief Engineer copy of his reconnaissance survey report furnished the Forest Service on Gibbons Pass road in the Bitterroot and Beaverhead National Forests, Montana.

Copy of a preliminary investigation report on the Grand Marais-Gunflint road, in the Superior National Forest, Minnesota, furnished by him to the District Forester upon the latter's request was submitted to the Washington Office by District Engineer Hathaway. The length of this proposed road is 15 miles and the cost of construction is estimated at \$51,500.

Mr. Hathaway reports receipt of a request from the District Forester at Denver for a preliminary investigation of the Stoney River Road in the Superior National Forest, St. Louis and Lake counties, Minn.

Highway Engineers Craig and Wells were engaged practically the whole month in working up survey notes on the Russellville-Pleasant Hill Road in the Ozark National Forest, Arkansas.

District Engineer Hewes inspected the Zig Zag Government Camp and Medford-Klamath Falls projects in Idaho, and examined and revised reconnaissance reports on National Forest projects in Washington and Oregon.

District Engineer Sweetser inspected the Salmon River project, Klamath National Forest, California, which is under construction. The force was temporarily disorganized to assist the Forest Service in fighting forest fires.

Construction was resumed on the Winslow-Long Valley road, Coconino National Forest, Arizona, with Mr. K. C. Balcomb, Junior Highway Engineer, in charge.

Construction on the Laguna project, Cleveland National Forest, California, has been progressing slowly owing to the lack of labor. Better results are expected during August.

and River, Idaho, toward the Montana State line, terminal
near Yellowstone, Montana, in length of 10 miles
and within the Grand National Forest.

During the month there were received from District Engineer
Hewes reconnaissance survey reports on 8 National Forest projects, namely,
Anna Creek, Plover-Enterprise, Eugene-Ferris, Plover-Trail, Ploverville-
Mitchell, and Mount Hood Loop, in Oregon, and Blawie Pass, and Republic-
Nawassa, in Washington, covering 199.55 miles in length, the estimated
cost of construction being \$984,867.18.

The District Engineer transmitted to the Chief Engineer
reconnaissance survey report furnished the Forest Service
road in the Bitterroot and Beaverhead National Forests.

Copy of a preliminary investigation report on the Grand Marais-
Gullitt road, in the Superior National Forest, Minnesota, furnished by
him to the District Forester upon the latter's request was submitted to
the Washington Office by District Engineer Hathaway. The length of this
proposed road is 12 miles and the cost of construction is estimated at
\$51,500.

Mr. Hathaway reports receipt of a request from the District
Forester at Denver for a preliminary investigation of the Stoney F.
Road in the Superior National Forest, St. Louis and Lake counties, Minn.

Highway Engineers Craig and Wells were engaged practically the
whole month in working up survey notes on the Russellville-Pleasant Hill
Road in the Ozark National Forest, Arkansas.

District Engineer was inspected by the Big Bay Government and
Medford-Klamath Falls projects in Idaho, examined and revised recon-
naissance reports on National Forest projects in Washington and Oregon.

Project W. in the Sweetwater National Forest, the Salmon River project
in the Shoshone National Forest, Idaho, is under construction.
The project is being supervised by the Forest Service in
forest lines.

Construction was started on the Winslow-Long Valley road, Coconino
County, Arizona, with Mr. C. O. Balcomb, Junior Highway Engineer,
in charge.

Construction on the Grand project, Coconino County, Arizona,
has been progressing slowly owing to the late season.
Best results are expected during August.

Warm River, Idaho, toward the Idaho-Montana State line, terminating near Yellowstone, Montana, is 47.3 miles in length and 37 miles thereof are within the Targhee National Forest.

During the month there were received from District Engineer Hewes reconnaissance survey reports on 8 National Forest projects, namely, Anna Creek, Flora-Enterprise, Eugene-Florence, Tiller-Trail, Prineville-Mitchell, and Mount Hood Loop, in Oregon, and Blewett Pass, and Republic-Waucunda, in Washington, covering 199.55 miles in length, the estimated cost of construction being \$984,867.18.

Mr. Whittaker transmitted to the Chief Engineer copy of his reconnaissance survey report furnished the Forest Service on Gibbons Pass road in the Bitterroot and Beaverhead National Forests, Montana.

Copy of a preliminary investigation report on the Grand Marais-Gunflint road, in the Superior National Forest, Minnesota, furnished by him to the District Forester upon the latter's request was submitted to the Washington Office by District Engineer Hathaway. The length of this proposed road is 15 miles and the cost of construction is estimated at \$51,500.

Mr. Hathaway reports receipt of a request from the District Forester at Denver for a preliminary investigation of the Stoney River Road in the Superior National Forest, St. Louis and Lake counties, Minn.

Highway Engineers Craig and Wells were engaged practically the whole month in working up survey notes on the Russellville-Pleasant Hill Road in the Ozark National Forest, Arkansas.

District Engineer Hewes inspected the Zig Zag Government Camp and Medford-Klamath Falls projects in Idaho, and examined and revised reconnaissance reports on National Forest projects in Washington and Oregon.

District Engineer Sweetser inspected the Salmon River project, Klamath National Forest, California, which is under construction. The force was temporarily disorganized to assist the Forest Service in fighting forest fires..

Construction was resumed on the Winslow-Long Valley road, Coconino National Forest, Arizona, with Mr. K. C. Balcomb, Junior Highway Engineer, in charge.

Construction on the Laguna project, Cleveland National Forest, California, has been progressing slowly owing to the lack of labor. Better results are expected during August.

During the month there were no reports from District Forester
Hewes reconnaissance survey reports on National Forest land
Anna Creek, Elora-Tulip, Eugene-Elora, Tilton-Tulip, and
Mitchell, and Mount Hood Loop, in Oregon, and Elbert Peak, and
Tahoe, in Washington, covering 109.55 miles in length, the estimated
cost of construction being \$84,887.18.

Mr. Hittaker transmitted to the Chief Engineer copy of his reconnaissance survey report furnished the Forest Service on Gibbons Pass in the Bitterroot and Beaverhead National Forests, Montana.

Copy of a preliminary investigation report on the Grand Rapids-Orillia road, in the Superior National Forest, Minnesota, furnished by him to the District Forester upon the latter's request was submitted to the Washington Office by District Engineer Highway. The length of this proposed road is 15 miles and the cost of construction is estimated at \$21,500.

17. Highway reports receipt of a request from the District Forester at Denver for a preliminary investigation of the Stoney River Road in the Superior National Forest, St. Louis and Lake counties, Minn.

Highway Engineers Craig and Ellis were engaged in this month in working up survey notes of the Russellville-Pikeville Road in the Ozark National Forest, Arkansas.

reports on National Forest projects in Washington and Oregon. The report on National Forest projects in Idaho, and examined and revised. District Engineer. Howes inspected the Big Lost Government Camp.

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Valley Road, Coconino
National Highway, English

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Mr. Whittaker conferred with representatives of the Forest Service, inspected forest projects in portions of Idaho and Wyoming, and consulted with the district fiscal agent, and the Chief of Accounts of Washington, D. C., of the Forest Service at Denver.

Mr. Whittaker inspected the Teton Pass road and Durango-Silverton project, in Wyoming and Colorado, respectively. Construction continues satisfactorily on the former in spite of difficulties experienced in the way of securing labor and supplies.

Surveys are progressing on the North Fork and Yaak Valley projects in Montana.

The District Engineer has received from Forest Districts 4 and 2, respectively, requests for reconnaissance reports on Idaho projects, totalling 150 miles, and reports on 6 projects in Colorado, Wyoming and South Dakota, aggregating 138 miles in length, and for preliminary investigations in the last three States of 16 projects covering 139 miles.

ECONOMICS.

State Management of Highways.

Information charts for the bulletin on Organization and Procedure of State Highway Departments were completed during the month. Chart 1 deals with the present organization and duties of highway departments; Chart 2 with existing classification and procedure in construction and maintenance of State and State-aid highways, and Chart 3 with sources and disposition of State road funds for the year 1917. Copies of these charts have been submitted to the State highway departments for checking and approval. In connection with this work a bulletin dealing with the maintenance of State highways was started by Mr. J. L. Harrison, engineer economist. Some of the field work on this bulletin is now being carried on in New York, Maine, Massachusetts, and other eastern States.

At the request of officials of the newly established highway departments of Indiana and Texas the Office cooperated during the month in the preparation of forms and systems of procedure. Mr. A. L. Luedke, engineer economist, was assigned to this work.

Economic Highway Survey.

The economic highway survey of the roads of eastern and southern Maryland is progressing satisfactorily. Two parties were in the field during the month: W. E. Rosengarten, engineer economist, in charge of one, and W. A. Friend, Maryland Road Commissioner, in charge of the other. R. F. Eastham and J. J. Tobin were taken off this work during the month and are now in charge of cantonment road work.

Forest Service at Denver.

inspected the Teton Pass road and Durango-Silverton project in Colorado, respectively. Construction continuing in spite of difficult labor and supplies. Surveys are progressing on the North Fork in Montana.

The District Engineer has received from Forest Districts respectively reports for reconnaissance reports on Indian trails, and reports on projects in Colorado, South Dakota, aggregating 136 miles in length, and for projects covering investigations in the last three states of 16 projects covering.

ECONOMICS.

State Management of Highways.

Information charts for the bulletin on organization and procedure of State Highway Departments were completed during the month. Chart I deals with the present organization and duties of highway departments; Chart II with existing classification and procedure in construction and maintenance of State and State-aid highways, and Chart III resources and disposition of State road funds for the year 1917. Copies of these charts have been submitted to the State highway departments and approved. In connection with this work a bulletin dealing with the management of State highways was started by Mr. J. H. Harwood. Some of the field work on this bulletin is now completed. Some of the field work on this bulletin is now completed. Some of the field work on this bulletin is now completed.

to the West of office in Texas. The work on this bulletin is now completed. Some of the field work on this bulletin is now completed.

Highway Survey.

roads of various parties were in the interior of the State. The work on this bulletin is now completed. Some of the field work on this bulletin is now completed.

Lecture Work.

On July 14, M. O. Eldridge delivered a lecture on Construction and Maintenance of Earth Roads before the Farmers Club at Herndon, Va.

Photographic Work.

One set of 52 lantern slides was sent out, 387 prints, and 74 bromide enlargements.

CONSTRUCTION AND MAINTENANCE.

Object Lesson Roads.

C. T. Harrison, S. R. C., is engaged in building an object lesson road in Travis County, Texas.

J. H. Dodge, S. R. C., is building an object lesson sand-clay road at Tarboro, North Carolina.

S. Leroy Taylor, J. H. E., is superintending the construction of gravel roads in Sussex County, Virginia. His address is Stony Creek, Va.

Experimental Roads.

F. A. Davis, J. H. E., has replaced A. S. Brainard in charge of the construction of the experimental top-soil road in Prince William County, Virginia. His address is Dumfries, Virginia.

D. G. Haire, S. R. C., is superintending the work under a contract in repairing the bituminous gravel-concrete road in Fairfax County, Va., between Alexandria and Gum Spring. Mr. Haire's address is 25 North Washington Street, Alexandria, Virginia.

Sections 8, 9, and 10 of the road at Chevy Chase, Maryland, and Section 3 of the Russell Road, Alexandria County, Virginia, have been surface-treated under the supervision of J. H. Eldridge, S. R. C., D. G. Haire, S. R. C., and the local patrolmen.

Leave.

P. A. Rideout is on leave without pay for a period of three months on account of illness.

R. E. Royall is on leave without pay for a period of one month in order to recuperate from a sunstroke.

1934

On July 14, M. O. Eldridge delivered a lecture on Construction and Maintenance of Earth Roads before the Farmers Club at Haddon, Va.

Photographic Work.

Photographic lantern slides were sent out, 387 prints, and 100

CONSTRUCTION AND MAINTENANCE.

Object Lesson Roads.

J. T. Harrison, S. R. C., is building an object lesson road in Travis County, Texas.

J. H. Dodge, S. R. C., is building an object lesson road at Tabor, North Carolina.

J. H. Taylor, J. H. E., is building the concrete road in Sussex County, Virginia. The road is 1/2 mile long.

Experimental Roads.

E. A. Davis, J. H. E., has replaced A. S. Brainerd in charge of the construction of the experimental top-soil road in Prince William County, Virginia. His address is Danville, Virginia.

J. G. Haire, J. H. E., is superintending the work on the road in repairing the bituminous gravel-concrete road in Fairfax County, Virginia. Mr. Haire's address is 1111 North Washington Street, Alexandria, Virginia.

Sections 4, 9, and 10 of the road at Cherry Grove, Virginia, of the Russell Road, Alexandria County, Virginia, are under the supervision of J. H. Eldridge, S. R. C., and the work is being done.

Notes.

It is found that no leaves without any for a period of 10 days.

R. E. Royall is to be paid for a period of one month in order to recuperate from his illness.

TESTS AND RESEARCH.

Administration.

F. P. Pritchard resigned from the position of assistant chemist July 23. E. Hummer was appointed to the position of laboratory apprentice July 16, and assigned to the Physical Laboratory on rock tests and investigations. C. E. Proudley was furloughed for the period of the war, having enlisted in the Coast Artillery.

Routine Tests and Analyses.

Twenty-one samples, all of bituminous materials, were examined in the Chemical Laboratory; 58 samples of rock, sand, gravel, etc., were examined in the Physical Laboratory, and 50 samples were examined and classified in the Microscopic Laboratory.

Research upon the Properties of Dust Prevention and Road Binders.

Owing to the greatly decreased force in the Chemical Laboratory little progress was made upon researches previously reported.

Typical specifications for all types of bituminous road materials were completed and submitted to various manufacturers of bituminous materials for comment and criticism. A number of replies from manufacturers have been received and it is expected in the near future to remodel these specifications for general adoption by the Office.

A new ultra violet ray apparatus has been installed for continuation of the investigation of the effect of exposure on samples of bituminous materials. It is thought that an accelerated exposure test may be made by the means of these rays.

In view of the fact that many specifications for road oils require a certain percentage of so-called asphalt, investigations have been started to determine the percentage of residue of definite penetration which may be obtained by evaporation of typical oils for cold and hot surface applications.

Non-Bituminous Road Material Investigations.

Data is being collected on the relative test results obtained by the ordinary abrasion test and one made in a slotted cylinder. It has been felt for some time that the cushion of dust produced in the closed cylinder when testing soft grades of rock tends to reduce the amount of detritus produced and thus gives a false idea of the relative wearing value of the rock. It is believed that it may be advisable to modify the standard test and make use of a slotted cylinder.

Administration

The position of assistant chemist in the laboratory of the U.S. Geological Survey is held by Mr. F. P. ... having worked in the Coast Artillery.

Geological Information and Road Building

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Geological Information and Road Building

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Geological Information and Road Building

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A new grinding machine, designed in the Office, has been installed and will be used for the preparation of compression specimens of Rock.

After preliminary examination of a nearby quarry for the purpose of testing out data to be reported on forms devised in the Office, Mr. Jackson and Mr. Mitman have been assigned to a field investigation of rock quarrying, crushing and screening plants in the new England and Middle Atlantic States. Between 50 and 75 typical rock quarries will be visited in each of the groups and data secured upon the methods of quarrying, crushing and screening.

Soil Pressure Investigations.

During July study of the distribution of pressure under concentrated loads through sand fills was conducted; bearing blocks $8\frac{1}{4}$ inches in diameter, as well as circular blocks of 1, 2, 4 and 8 square feet being used. Blocks resembling truck wheels also were used. It has been found that for a sand fill of approximately 5 feet, the percentage of unit transmission directly under the center of the block is directly proportional to the area of the bearing block.

The manufacture of 100 additional soil pressure discs is proceeding rapidly. A special form of indicating instrument also has been devised for testing explosives.

A stand pipe for conducting tests on hydraulic fills was completed by the laboratory force and tests are now under way. Preliminary results will be given in the next field letter.

Concrete Investigations.

Lack of help has caused temporary suspension of the reinforced concrete slab tests, although a specimen is now in place and ready to be investigated.

DRAINAGE INVESTIGATIONS.

Construction Operation and Maintenance.

Reports are in progress, to present the findings of the field investigations and experimental work upon maintenance of drainage ditches.

Report transmitted:

Durability of Concrete Tile (in Southeastern States) - a progress report by R. D. Marsden.

Farm Drainage.

The field studies of vertical drains and of ditching plows have been completed and reports upon these investigations begun.

Reports:

Reports upon 22 farm surveys have been transmitted to the landowners interested, since the News Letter of July 15, including that on Marydel Drainage District in Caroline County, Maryland.

Seventeen other farm reports are awaiting review by the Office engineers.

Overflowed lands.

A survey has been begun by Fred F. Shafer, to determine the best plan of drainage for overflowed lands on Meadow River in Fayette County, West Virginia. This is the first district to undertake to secure drainage under the general drainage law which was enacted at the last session of the Legislature.

A meeting of landowners and others interested in the reclamation of overflowed lands along Kootenai River was held at Bonners Ferry, Idaho, on August 4. Representatives of Canadian interests that might be affected, or that might cooperate in reclaiming those lands on both sides of the International boundary, were to be present. Lewis A. Jones was present to explain the plans prepared by this Office for that project.

Reports transmitted:

Olley Creek Drainage District, in Cobb County, Georgia, - by J. V. Phillips.

Little River and Mill Creek Drainage District, in Cherokee, Cobb and Milton counties, Georgia, - by J. V. Phillips.

Wambaw Swamp, in Charleston and Berkeley counties, South Carolina, - by S. W. Frescoln.

Report received:

Scott Brook, in Sussex County, New Jersey, - by J. R. Haswell.

Tidal Marsh.

Report received:

E. W. Custis Farm, in Northampton County, Virginia, - by J. R. Haswell.

Introduction

The purpose of this report is to provide a summary of the findings of the survey conducted in the area of the Greek Drainage District, in California.

The survey was conducted by the U.S. Geological Survey, in cooperation with the California Department of Water Resources. The results of the survey are presented in this report.

Seventeen other reports are available from the same source.

Overview

A survey of the Greek Drainage District, in California, was conducted by the U.S. Geological Survey, in cooperation with the California Department of Water Resources. The results of the survey are presented in this report.

A meeting of landowners and of overflowed lands along the Greek Drainage District, in California, was held on August 1, 1961, at the U.S. Geological Survey, in cooperation with the California Department of Water Resources. The results of the meeting are presented in this report.

Summary

The Greek Drainage District, in California, is located in the northern part of the state.

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J. R. Howell

Irrigation in Humid Regions.

F. W. Stanley is on a trip of inspection and advice to landowners who are considering the installation of irrigation plants or the improvement of equipment on hand. Mr. Stanley has visited points in South Carolina and Florida.

IRRIGATION INVESTIGATIONS.

Administration.

Dr Fortier, who left Washington early in July in his summer inspection trip, spent ~~about~~ two weeks on annual leave in Montana. He spent several days early in August with W. G. Sloan and Mr. M. R. Lewis at Boise, Idaho, going over the irrigation and drainage work in that State. A conference at Salt Lake City, following the Idaho inspection, was attended by F. G. Harden, R. A. Hart, L. M. Winsor, F. C. Scobey, T. H. McCarthy, and E. C. Fortier.

Utilization of Water.

Work on the preparation of a general report on duty of water has been started in the Washington Office. This work, which is in the hands of R. P. Teele, Irrigation Economist, is to include a review of the experiments which have been conducted by the Irrigation division almost since its creation, as well as investigations of the subject made by many other agencies.

F. L. Bixby, I. E., whose duty of water experiments on meadow lands in Lamoille Valley, Nevada, were seriously interfered with early in the summer by unknown persons who meddled with weirs and other apparatus necessary in the work, reports that H. T. McQuiston, Agent, who is in immediate charge of the studies, has the situation well in hand, and that the depredations have ceased.

C. E. Tait, S. I. E., has been authorized to make an examination of water resources in Antelope Valley, California, at the request of the appraiser of the Federal Land bank at Berkeley, California. The Berkeley bank also requested an examination of general alkali and drainage conditions in Powder River Valley, near Baker, Oregon, which was made by W. G. Sloan, D. E.

R. B. Sleight's article on Evaporation from Water Surfaces and River Bed Materials was published in the Journal of Agricultural Research for July 30.

Appliances and Equipment.

C. G. Haskell, I. E., is completing a study of methods of sinking and casing wells in Southern California, as a continuation of his work on the same subject in the rice-growing sections of Texas. Mr. Haskell reports many failures where California methods were used which might have been prevented by the methods developed in the rice country, the California methods being adapted to open formations but not to fine sand.

Samples of a new type of current meter suggested by F. C. Scobey, S. I. E., have been received from a manufacturing firm which volunteered to develop the idea. These have been rated at the Bureau of Standards, and will have a practical test in the field at once. The meter is much more compact than the type now in use, and is expected to prove of greatest value where other meters can not be used at all. R. L. Parshall, A. I. E., also has completed a new meter of a nonrotating type, stream velocity being recorded by a torsion spring, and this will be tested against other types. An experimental turbine for a current meter also has been completed by Mr. Parshall. E. J. Hoff, mechanician, is experimenting with a new meter, and reports encouraging results.

Customs, Regulations, and Laws.

W. A. Hutchins, A. I. E., reports the examination of 237 court cases in connection with the study on irrigation districts by Frank Adams, I.M., and himself. The cases were from the following State courts: California, 88; Idaho, 48; Colorado, 25; Nebraska, 19; Washington, 15; Oregon, 9; Montana, 3; Utah, 3; Wyoming, 1. Twenty-six Federal court cases were also examined.

In connection with his work on canal reorganization L. M. Winsor, Agent, inspected the entire Price River system, including Mammoth Reservoir site where the dam recently washed out, a proposed new site, and new and old lands in the vicinity of Price, in order to pass on the desirability of developing this project. A committee of business men and farmers now is considering the formation of an irrigation district.

Drainage of Irrigated Lands.

W. G. Sloan, D. E., spent two weeks in going over drainage work in Montana and Wyoming, and securing run-off data and information on the effects of draining. The districts and projects visited in Wyoming were at Basin, Worland, Germania, Powell, Garland, and Lovell, and in Montana at Billings and Huntley.

F. L. Bixby, I. E., and R. A. Allen, Agent, are mapping Muddy River Valley, Nevada, to show the proposed change in the river channel to accomodate the large floods from the Meadow Valley wash which at times ruin large areas of crops in the valley. The flood channel will also serve as a drainage channel and for that reason the location is being made in the low part of the valley to relieve the higher lands from seepage and consequent water logging of the soil and deposit of alkali.

The report to accompany the map will show Mr. Bixby's recommendations for changes in the river, in the distribution system, and a design of a dam for the diversion of all the water of Muddy River by headgates on either side of the valley at the point of dam location

RURAL ENGINEERING.

The following designs and work in connection with them have either been completed or are in progress:

Drawings for a general barn, accompanied by a bill of materials.

Drawings for a hollow tile feed barn for the George Junior Republic, Grove City, Pa., and specifications for the hollow tile dairy barn reported last month.

Drawings for a "Community House" prepared at the request of representative of the Oregon Agricultural College.

Typical drawings for brick silos for Dairy Division.

Drawings and a bill of materials for a homemade water heater (Dairy Division).

Plans for a farmstead layout in the vicinity of Belhaven, N. C. Major industries - hogs, beef cattle, and corn raising.

Plans for two types of grain elevators intended to meet the requirements of large and small farmers, and for community storing.

Plans for sweet potato curing and storage houses.

Plans for a series of designs for root storage cellars.

Drawings showing the heating system layout perspective for the Community House.

Some work was done on drawings and manuscript for farmstead planning.

The manuscript and illustrations for bulletin on "Farm Domestic Water Systems" progressed considerably during the month.

An outline of suggestions for a series of bulletins on the Repair and Care of Farm Machinery was prepared.

A representative of the Office attended a tractor demonstration at Big Gunpowder, Maryland.

RURAL ENGINEERING.

The following designs and work in connection with them have either been completed or are in progress:

1. Design of a small dam for the purpose of irrigation.

2. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

3. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

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12. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

13. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

14. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

15. Design of a small dam for the purpose of irrigation, and also of a small dam for the purpose of irrigation.

Work in connection with the remodeling of building for the Bureau of Chemistry, Arlington Farm, was supervised during the month.

The Bonnie Burn Sanatorium at Scotch Plains, N. J. was visited for the purpose of advising the Superintendent relative to the use of sewage from the disposal plant on farm land.

Sewage disposal plants at Vineland, N. J., Millville, N. J., and Spring City, Pa., were visited for the purpose of study.

Miscellaneous:

Data on tractors and farm machinery is in the course of being collected, tabulated, and filed.

Some work was done in connection with an experimental compressed air outfit for the bureau of plant industry.

Consultations and correspondence were handled on the following subjects:

- Fertilizer Distributors.
- Ice House Design and Construction.
- Farm Electric Lighting Plants.
- Power Development of Streams.
- Water Supply Problems.
- Alcohol Engines.
- Farm Structures.

10-01
The following is a list of buildings for the Bureau of Prisons, which were destroyed during the fire of October 1, 1917, and the purpose of advising the Superintendent relative to the cost of the replacement of the same.

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Estimated cost of replacement of buildings destroyed during the fire of October 1, 1917, for the Bureau of Prisons.